

Patent claims

1. Alkyd resin emulsions for topcoats comprising a water-insoluble alkyd resin **A** and a water-soluble alkyd resin **B**, which is used as an emulsifying resin and is an esterification product of an alkyd resin **Ba**, which is homogeneously miscible with the alkyd resin **A** to be emulsified at least in a mass ratio range of **Ba** to **A** of from 2 : 98 to 50 : 50, and an adduct **Bb** of a C₁-C₄-alkoxypolyethylene glycol **Bba** and a cycloaliphatic dicarboxylic acid anhydride **Bbb** in a ratio of amounts of substance of **Bba** to **Bbb** of from 0.95 : 1.05 mol/mol to 1.05 : 0.95 mol/mol.
2. Alkyd resin emulsions according to claim 1, characterised in that they comprise in their solids content a mass fraction of 70 % to 95 % of the water-insoluble alkyd resin **A** and 5 % to 30 % of the water-soluble alkyd resin **B** employed as an emulsifying resin.
3. Alkyd resin emulsions according to claim 1, characterised in that the alkyd resin **B** is an esterification product of mass fractions of from 25 % to 60 % of the alkyd resin **Ba** and 40 % to 75 % of the adduct **Bb**.
4. Alkyd resin emulsions according to claim 1, characterised in that the alkyd resin **A** has an oil content of from 25 % to 75 % and an acid number of up to 20 mg/g.
5. Alkyd resin emulsions according to claim 1, characterised in that the acid number of the alkyd resin **B** is not more than 3 mg/g.
6. Process for the preparation of alkyd resin emulsions according to claim 1, characterised in that

- in the first step mass fractions of 70 % to 95 % of a C₁-C₄-alkoxypolyethylene glycol **Bba** having a weight-average molar mass M_w of from 500 g/mol to 4,000 g/mol, and
 - 5 5 % to 30 % of a cycloaliphatic dicarboxylic acid anhydride **Bbb** are mixed in a substance amounts ratio of from 0.95 : 1.05 mol/mol to 1.05 : 0.95 mol/mol, and are reacted in the presence of a catalyst, with opening of the acid anhydride, to form an adduct **Bb**,
 - 10 - in the second step a mass fraction of from 40 % to 75 % of the adduct **Bb** is esterified with a mass fraction of from 25 % to 60 % of the alkyd resin **Ba**, the sum of the said mass fractions in the reaction mixture giving 100 %, to form an alkyd resin **B**,
 - 15 - in the third step the alkyd resin **B** is mixed with water, a mass fraction of the alkyd resin of from 30 % to 60 % being present in the mixture, and the mixture having a dynamic viscosity, measured at 23 °C and a shear gradient of 100 s⁻¹, of from 5 Pa·s
 - 20 to 50 Pa·s, and
 - in the fourth step the alkyd resin **A** is mixed with the mixture of water and the alkyd resin **B** from the third step at a temperature of below 100 °C and the resulting alkyd resin emulsion is diluted to a
 - 25 solids mass fraction of from 40 % to 75 % and a dynamic viscosity of from 200 mPa·s to 3,000 mPa·s by addition of water.
- 7. Process according to claim 6, characterised in that
 - 30 in the second step the amount of the reactants is chosen such that the acid number of the alkyd resin **B** is not more than 3 mg/g.
- 8. Process according to claim 6, characterised in that the ratio of the mass of the alkyd resin **A** to the mass of the alkyd resin **B** is 70 : 30 kg/kg to 95 : 5 kg/kg.

9. Use of alkyd resin emulsions according to claim 1 for the preparation of water-dilutable paints or glazes.

10. Use of alkyd resin emulsions according to claim 1 as binders for coating substrates chosen from textiles,
5 mineral materials, metals and wood.